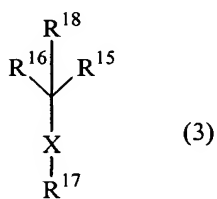


IN THE CLAIMS

Please amend the claims as follows:

Claims 1-17 (Canceled).

Claim 18 (Previously Presented): A compound represented by the following formula
(3):



(wherein, R¹⁵ represents a heterocyclic group which may have a substituent, R¹⁶ represents a cyclic hydrocarbon group which may have a substituent or a heterocyclic group which may have a substituent, R¹⁷ represents a cyclic hydrocarbon group which may have a substituent or a heterocyclic group which may have a substituent, R¹⁸ represents a hydrogen atom or a C₁₋₆ alkyl group and X represents -S-, -SO- or -SO₂-; or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.

Claim 19 (Previously Presented): The compound of Claim 18, wherein X represents -SO- or -SO₂-; or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.

Claim 20 (Previously Presented): The compound of Claim 18, wherein X represents -SO₂-; or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.

Claim 21 (Previously Presented): The compound of Claim 18, wherein the heterocyclic group represented by R^{15} , R^{16} or R^{17} is a 3- to 7-membered saturated or 4- to 7-membered unsaturated monocyclic heterocyclic group having from 1 to 4 atoms selected from nitrogen atom, oxygen atom and sulfur atom, or a 7- to 14-membered polycyclic heterocyclic group having from 1 to 4 atoms selected from nitrogen atom, oxygen atom and sulfur atom; or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.

Claim 22 (Previously Presented): The compound of Claim 18, wherein the cyclic hydrocarbon group represented by R^{16} or R^{17} is a cycloalkyl group having from 3 to 7 carbon atoms, cycloalkenyl group having from 4 to 7 carbon atoms, monocyclic or polycyclic aromatic hydrocarbon group having from 6 to 14 carbon atoms, spirohydrocarbon group having from 7 to 11 carbon atoms, crosslinked cyclic hydrocarbon group having from 7 to 10 carbon atoms or condensed polycyclic hydrocarbon group having from 8 to 14 carbon atoms; or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.

Claim 23 (Previously Presented): The compound of any one of Claim 18, wherein the substituent for the cyclic hydrocarbon group or heterocyclic group represented by R^{15} , R^{16} , or R^{17} is a group $-Q^{201}-Q^{202}-Q^{203}-Q^{204}-Q^{205}-Q^{206}-Q^{207}$, in which Q^{201} represents a single bond, an alkyl group having from 1 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms or a heterocyclic group; Q^{202} represents a single bond, -O-, -NH-, -CH=N-, -C(alkyl)=N-, -N(alkyl)- or -S-; Q^{203} represents a single bond, -CO-, -CS-, -SO-, -SO₂- or -CONH-; Q^{204} represents a single bond, an alkyl group from 1 to 6 carbon atoms, an alkenyl group having

from 2 to 6 carbon atoms, a cycloalkyl group, a cycloalkenyl group, an aromatic hydrocarbon group or a heterocyclic group; Q^{205} represents a single bond, -NH- or -N(alkyl)-; Q^{206} represents a single bond, -O-, -CO-, -CS-, -SO₂-, -SO- or -S-; and Q^{207} represents a hydrogen atom, a halogen atom, a hydroxy group, an oxo group, a C₁₋₆ alkyl group, a C₂₋₆ alkenyl group, a C₃₋₈ cycloalkyl group, a C₁₋₆ alkoxy group, a C₂₋₆ alkenyloxy group, an azide group, a cyano group, an amino group, a C₁₋₆ alkylamino group, a di(C₁₋₆ alkyl)amino group, a C₂₋₆ alkanoylamino group, a di(C₂₋₆ alkanoyl)amino group, a carboxyamino group, a C₁₋₆ alkoxycarbonylamino group, a di(C₁₋₆ alkoxy)carbonylamino group, a heterocyclic group, an aromatic hydrocarbon group, a cycloalkenyl group, a heterocyclic oxy group, or an aromatic hydrocarbon-oxy group (wherein, the alkyl group having from 1 to 6 carbon atoms, alkenyl group having from 2 to 6 carbon atoms, cycloalkyl group, cycloalkenyl group, heterocyclic group, heterocyclic-oxy group, aromatic hydrocarbon group or aromatic hydrocarbon-oxy group may be substituted with 1 to 3 substituents selected from halogen atoms, C₁₋₆ alkyl groups, C₁₋₆ alkoxy groups, C₂₋₆ alkenyl groups, carboxyamino C₁₋₆ alkyl groups, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl groups, formyl group, C₂₋₆ alkanoyl groups, oxo group, nitro group, cyano group, azide group, amidino group, C₂₋₆ alkenyloxy groups, hydroxy group, carboxyl group, C₇₋₁₆ aralkyl groups, thioxo group, C₂₋₇ alkanoyl groups, C₂₋₇ thioalkanoyl groups, thioformyl group, amino group, C₁₋₆ alkylamino groups, di(C₁₋₆ alkyl)amino groups, C₁₋₆ alkoxycarbonyl groups, carbamoyl group, C₁₋₆ alkylcarbamoyl groups, di(C₁₋₆ alkyl)carbamoyl groups, thiocarbamoyl group, C₁₋₆ alkylthiocarbamoyl groups, di(C₁₋₆ alkyl)thiocarbamoyl groups, C₁₋₆ alkoxycarbamoylamino groups,

C₁₋₆ alkoxycarbamoyl(C₁₋₆ alkyl)amino groups, C₂₋₇ alkanoylamino groups, C₂₋₇ alkanoyl (C₁₋₆ alkyl)amino groups, thio C₂₋₇ alkanoylamino groups, thio C₂₋₇ alkanoyl (C₁₋₆ alkyl)amino groups, formylamino group, formyl(C₁₋₆ alkyl)amino groups, thioformylamino group, thioformyl(C₁₋₆ alkyl)amino groups, C₂₋₇ alkanoyloxy groups, formyloxy group, C₁₋₆

alkoxycarbonyloxy groups, carbamoyloxy group, C₁₋₆ alkylcarbamoyloxy groups, di(C₁₋₆ alkyl)carbamoyloxy groups, aminocarbonylamino group, (C₁₋₆ alkyl)aminocarbonylamino groups, di(C₁₋₆ alkyl)aminocarbonylamino groups, aminocarbonyl(C₁₋₆ alkyl)amino groups, (C₁₋₆ alkyl)aminocarbonyl(C₁₋₆ alkyl)amino groups, di(C₁₋₆ alkyl)aminocarbonyl(C₁₋₆ alkyl)amino groups, mercapto group, C₁₋₆ alkylthio groups, C₁₋₆ alkylsulfinyl groups, C₁₋₆ alkylsulfonyl groups, aminosulfonyl group, C₁₋₆ alkylaminosulfonyl groups, di(C₁₋₆ alkyl)aminosulfonyl groups, C₁₋₆ alkylsulfonylamino groups, C₁₋₆ alkylsulfonyl(C₁₋₆ alkyl)amino groups, aminosulfonylamino group, C₁₋₆ alkylaminosulfonylamino groups, di(C₁₋₆ alkyl)aminosulfonylamino groups, aminosulfonyl(C₁₋₆ alkyl)amino groups, C₁₋₆ alkylaminosulfonyl(C₁₋₆ alkyl)amino groups, and di(C₁₋₆ alkyl)aminosulfonyl(C₁₋₆ alkyl)amino groups; or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.

Claim 24 (Previously Presented): The compound of Claim 18, wherein R¹⁶ and R¹⁷ each represents a monocyclic or polycyclic aromatic hydrocarbon group having from 6 to 14 carbon atoms, or a heterocyclic group (in which, the hydrocarbon group or heterocyclic group may have 1 to 3 substituents selected from halogen atoms, C₁₋₆ alkyl groups, C₁₋₆ alkoxy groups, C₂₋₆ alkenyl groups, formyl group, C₂₋₆ alkanoyl groups, carboxyl group, carboxyamino C₁₋₆ alkyl groups, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl groups, oxo group, nitro group, cyano group, amidino group, C₂₋₇ alkenyloxy groups, hydroxy group, thioxo group, amino group, C₁₋₆ alkylamino groups, di C₁₋₆ alkylamino groups, C₁₋₆ alkoxycarbonyl groups, carbamoyl group, C₁₋₆ alkylcarbamoyl groups, di C₁₋₆ alkylcarbamoyl groups, thiocarbamoyl group, C₁₋₆ alkylthiocarbamoyl groups, di C₁₋₆ alkylthiocarbamoyl groups, mercapto group, C₁₋₆ alkylthio groups, C₁₋₆ alkylsulfinyl groups and C₁₋₆ alkylsulfonyl groups); and

R¹⁵ represents a heterocyclic group (in which, the heterocyclic group may be substituted with a halogen atom, C₁₋₆ alkyl group, C₁₋₆ alkoxy group, C₂₋₆ alkenyl group, C₂₋₆ alkenyloxy group, hydroxy group, carboxyl group, carboxy C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonyl C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonyl-C₂₋₆ alkenyl group, hydroxyl C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbon-sulfonyl C₁₋₆ alkyl group, heterocyclic-C₁₋₆ alkylamino group, heterocyclic group, heterocyclic-C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbon group, C₆₋₁₄ aromatic hydrocarbon C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbon thio C₁₋₆ alkyl group, azido-(C₁₋₆ alkyl) group, amino C₁₋₆ alkyl group, C₁₋₆ alkylamino C₁₋₆ alkyl group, di C₁₋₆ alkylamino C₁₋₆ alkyl group, hydroxyl C₁₋₆ alkylamino C₁₋₈ alkyl group, C₁₋₆ alkoxy C₁₋₆ alkylamino C₁₋₆ alkyl group, (hydroxy C₁₋₆ alkyl)(C₁₋₆ alkoxy C₁₋₆ alkyl)amino C₁₋₆ alkyl group, C₂₋₆ alkanoylamino C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbon sulfonylamino C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl group, carbamoylamino C₁₋₆ alkyl group, N-alkylcarbamoylamino C₁₋₆ alkyl group, N,N-dialkylcarbamoylamino C₁₋₆ alkyl group, aminosulfonylamino C₁₋₆ alkyl group, N-alkylsulfonylamino C₁₋₆ alkyl group, N,N-dialkylsulfonylamino C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbon C₁₋₆ alkylamino group, heterocyclic C₁₋₆ alkylamino group, carbamoyloxy C₁₋₆ alkyl group, N-alkylcarbamoyloxy C₁₋₆ alkyl group, N,N-dialkylcarbamoyloxy C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbon-C₁₋₆ alkylcarbamoyloxy C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonyloxy-C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbonoxycarbonyloxy C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbonsulfonylamino-C₁₋₆ alkanoylamino C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkylamino group, amino C₁₋₆ alkylamino group, C₁₋₆ alkylamino C₁₋₆ alkylamino group, di(C₁₋₆ alkyl)amino C₁₋₆ alkylamino group, carboxyamino C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl group, C₁₋₆ alkylsulfonylamino C₁₋₆ alkyl group, amino C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl group, N-C₁₋₆ alkylamino C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl group, N,N-di C₁₋₆ alkylamino C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl group, heterocyclic carbonyl group, heterocyclic

carbonylamino group, C₆₋₁₄ aromatic hydrocarboncarbonyl group, C₆₋₁₄ aromatic carbonylamino group, heterocyclic C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl group, heterocyclic C₂₋₆ alkenylcarbonylamino C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarbonalkenylcarbonylamino C₁₋₆ alkyl group, C₆₋₁₄ aromatic hydrocarboncarbonylamino C₁₋₆ alkyl group, heterocyclic carbonylamino C₁₋₆ alkyl group, C₁₋₆ alkoxyoxalylamino C₁₋₆ alkyl group, carbamoyl group, N-C₁₋₆ alkylcarbamoyl group, N,N-di C₁₋₆ alkylcarbamoyl group, C₁₋₆ alkyl-C₃₋₈ cycloalkylcarbamoyl group, C₃₋₈ cycloalkyl-C₁₋₆ alkylcarbamoyl group, heterocyclic carbamoyl group, C₁₋₆ aromatic carbamoyl group, heterocyclic carbonylhydrazonomethyl group, C₆₋₁₄ aromatic hydrocarboncarbonylhydrazonomethyl group, C₁₋₆ alkylthio C₁₋₆ alkylcarbamoyl group, C₁₋₆ alkylsulfinyl C₁₋₆ alkylcarbamoyl group, C₁₋₆ alkylsulfonyl C₁₋₆ alkylcarbamoyl group, hydroxyaminocarbonyl group, hydrazinocarbonyl group or N-C₁₋₆ alkylhydrazinocarbonyl group, thioformylamino-C₆₋₁₄ aromatic hydrocarbon-thiocarbonylamino C₁₋₆ alkyl group, thioformyl-(C₁₋₆ alkylamino-C₆₋₁₄ aromatic hydrocarbon-thiocarbonylamino C₁₋₆ alkyl group, formylamino-C₆₋₁₄ aromatic hydrocarbon-carbonylamino C₁₋₆ alkyl group,

formyl-C₁₋₆ alkylamino-C₆₋₁₄ aromatic hydrocarbon-carbonylamino C₁₋₆ alkyl group, C₁₋₆ alkanoyl-heterocycle-carbonylamino C₁₋₆ alkyl group, di(C₂₋₆ alkanoyl)amino(C₁₋₆ alkyl) group, di(C₁₋₆ alkoxy carbonyl)amino C₁₋₆ alkyl group, C₁₋₆ alkyl-heterocycle-carbonyl group, C₃₋₇ cycloalkyl C₁₋₆ alkylaminocarbonyl group, C₁₋₆ alkoxyaminocarbonyl group, (hydroxy)(C₁₋₆ alkyl)aminocarbonyl group, (C₁₋₆ alkoxy)(C₁₋₆ alkyl)aminocarbonyl group, N'-C₁₋₆ alkylhydrazinocarbonyl group, N',N'-di C₁₋₆ alkylhydrazinocarbonyl group, N,N'-di C₁₋₆ alkylhydrazinocarbonyl group, N,N',N'-tri C₁₋₆ alkylhydrazinocarbonyl group, N'-(heterocycle-carbonyl)-hydrazinocarbonyl group, formyl group, hydroxyimino group, C₁₋₆ alkoxyimino group, bis(C₁₋₆ alkoxy C₁₋₆ alkyl)amino C₁₋₆ alkyl group, hydroxy-C₁₋₆ alkyl-heterocyclic group, C₁₋₆ alkoxy-C₁₋₆ alkyl-heterocyclic group, C₁₋₆ alkoxy carbonylamino C₁₋₆

alkyl-heterocyclic group, amino C₁₋₆ alkyl-heterocyclic group, N-C₁₋₆ alkylamino C₁₋₆ alkyl-heterocyclic group, N,N-di C₁₋₆ alkylamino C₁₋₆ alkyl-heterocyclic group, hydroxy-heterocyclic group, C₁₋₆ alkoxy-heterocyclic group, carboxy-C₂₋₅ alkenyl group, or oxo group (wherein, the above-described C₆₋₁₄ aromatic hydrocarbon group or heterocyclic group may be substituted with a halogen atom, C₁₋₆ alkyl group, C₁₋₆ alkoxy group, C₂₋₆ alkenyl group, formyl group, C₂₋₆ alkanoyl group, carboxyl group, carboxyamino C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl group, oxo group, nitro group, cyano group, amidino group, C₂₋₆ alkenyloxy group, hydroxy group, thioxo group, amino group, C₁₋₆ alkylamino group, di C₁₋₆ alkylamino group, amino C₁₋₆ alkyl group, C₁₋₆ alkoxycarbonyl group, carbamoyl group, C₁₋₆ alkylcarbamoyl group, di C₁₋₆ alkylcarbamoyl group, thiocarbamoyl group, C₁₋₆ alkylthiocarbamoyl group, di(C₁₋₆ alkyl)thiocarbamoyl group, C₂₋₇ alkanoylamino group, C₂₋₇ alkanoyl(C₁₋₆ alkyl)amino group, thio(C₂₋₇ alkanoyl)amino group, thio(C₂₋₇ alkanoyl)(C₁₋₆ alkyl)amino group, formylamino group, formyl(C₁₋₆ alkyl)amino group, thioformylamino group, thioformyl(C₁₋₆ alkyl)amino group, C₂₋₇ alkanoyloxy group, formyloxy group, mercapto group, C₁₋₆ alkylthio group, C₁₋₆ alkylsulfinyl group, C₁₋₆ alkylsulfonyl group, aminosulfonyl group, C₁₋₆ alkylaminosulfonyl group, di(C₁₋₆ alkyl)aminosulfonyl group, C₁₋₆ alkylsulfonylamino group or C₁₋₆ alkylsulfonyl(C₁₋₆ alkyl)amino group); or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.

Claim 25 (Previously Presented): A medicament comprising, as an active ingredient, a compound of Claim 18, or N-oxide or S-oxide of the compound, salt thereof, or solvate of the above-described compound, and one or more other ingredients.

Claim 26 (Previously Presented): A method of preventing or treating a disease resulting from abnormal production or secretion of β -amyloid, comprising administering an effective amount of the medicament of Claim 25.

Claim 27 (Previously Presented): A method of preventing or treating Alzheimer disease or Down syndrome, comprising administering an effective amount of the medicament of Claim 25.

Claim 28 (Previously Presented): A pharmaceutical composition, comprising the compound of Claim 18, or N-oxide or S-oxide of the compound, salt thereof, or solvate of the above-described compound; and a pharmaceutically acceptable carrier.

Claim 29 (Previously Presented): A method of preparing a medicament, comprising adding the compound of Claim 18, or N-oxide or S-oxide of the compound, salt thereof, or solvate of the above-described compound, to a pharmaceutically acceptable carrier.

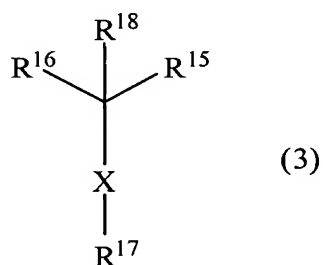
Claim 30 (Previously Presented): A method for preventing or treating a disease resulting from abnormal production or secretion of β -amyloid protein, comprising administering an effective amount of the composition of Claim 28.

Claim 31 (Previously Presented): A method for preventing or treating Alzheimer disease or Down syndrome, comprising administering an effective amount of the composition of Claim 28.

Claim 32 (Previously Presented): A method of treating a disease resulting from abnormal production or secretion of β -amyloid, comprising administering an effective amount of the compound of Claim 18, or N-oxide or S-oxide of the compound, salt thereof, or solvate of the above-described compound.

Claim 33 (Previously Presented): The method of Claim 32, wherein the disease resulting from abnormal production or secretion of β -amyloid protein is Alzheimer disease or Down syndrome.

Claim 34 (New): A compound represented by the following formula (3):



(wherein, R^{15} represents a heterocyclic group selected from a 3- to 7-membered saturated or 4- to 7-membered unsaturated monocyclic heterocyclic group having from 1 to 4 atoms selected from nitrogen atom, oxygen atom and sulfur atom, and a 7- to 14-membered polycyclic heterocyclic group having from 1 to 4 atoms selected from nitrogen atom, oxygen atom and sulfur atom, which may have a substituent,

R^{16} represents a cycloalkyl group having from 3 to 7 carbon atoms, a monocyclic aromatic hydrocarbon group having from 6 to 14 carbon atoms, or a heterocyclic group selected from a 3- to 7-membered saturated or 4- to 7-membered unsaturated monocyclic heterocyclic group having from 1 to 4 atoms selected from nitrogen atom, oxygen atom and sulfur atom, which may have a substituent,

R^{17} represents a monocyclic aromatic hydrocarbon group having from 6 to 14 carbon atoms, or a heterocyclic group selected from a 3- to 7-membered saturated or 4- to 7-membered unsaturated monocyclic heterocyclic group having from 1 to 4 atoms selected from nitrogen atom, oxygen atom and sulfur atom, which may have a substituent,

R^{18} represents a hydrogen atom or a C_{1-6} alkyl group, and

X represents -S-, -SO-, or -SO₂-;

or N-oxide or S-oxide of the compound; salt thereof; or solvate of the above-described compound.